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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/580,899

05/26/2006

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EXAMINER

JENKINS, JERMAINE L

ART UNIT

PAPER NUMBER

2855

MAIL DATE

DELIVERY MODE

06/29/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/580,899

Applicant(s)

OIKAWA ET AL.

Examiner

Jermaine Jenkins

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 11-14 is/are rejected.
- 7) ☒ Claim(s) 7-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                               | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                      | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Objections***

1. Claim 11 is objected to because of the following informalities: Claim 11 recites the limitation "the oscillating circuit" in line 4. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 & 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Schmidt et al (4,295,102).

In regards to claim 1, Schmidt et al teaches a first piezoelectric substrate (6, i.e. base member) having a surface acoustic wave element (7, i.e. resonator) for reference formed on an upper surface thereof (Column 2, lines 32-40); a second piezoelectric substrate (11, i.e. thin flexible wafer) that is thinner in thickness than the first

piezoelectric substrate (6) and having a surface acoustic wave element (10, i.e. array) for pressure detection formed on a lower surface thereof; and a sealing member (12, i.e. glass frit) to be joined to the upper surface of the first piezoelectric substrate (6) and to the lower surface of the second piezoelectric substrate (11) so as to form a space (enclosed by the sealing member (12) between the first piezoelectric substrate (6) and the second piezoelectric substrate (11) (Column 2, lines 50-68; See Figure 3 & 4).

With respect to claim 2, Schmidt teaches wherein the elements are disposed so that at least part of the surface acoustic wave element (7) for reference is opposed to the surface acoustic wave element (10) for pressure detection (Column 3, lines 11-20; See Figures 3 & 4).

With respect to claim 3, Schmidt teaches wherein thermal expansion coefficients of both of the piezoelectric substrates in at least one direction are substantially the same (Column 3, lines 58-68).

With respect to claim 4, Schmidt teaches wherein the both piezoelectric substrates (6 & 11) are made of piezoelectric single crystals having the same composition, and cut angles of both of the piezoelectric substrates (6 & 11) and propagating directions of surface acoustic waves with respect to the crystal axis of the piezoelectric single crystal are substantially the same (Column 4, lines 3-17; See Figures 3 & 4).

With respect to claim 6, Schmidt teaches wherein an electrode pad (9) electrically connected to the surface acoustic wave element for pressure detection, the

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electrode pad (9) being provided on the lower surface of the second piezoelectric substrate within the space enclosed by the sealing member (12); and a connection pad electrically connected to the electrode pad via a conductive bonding material (The connection pad must be connected by a conductive material such as a silver solder due to the pads direct connection to electrically conductive leads (8)), the connection pad being provided on the upper surface of the first piezoelectric substrate inside the sealing member (12) (Column 2, lines 32-40; See Figures 2 & 3).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt et al (4,295,102) in view of Kishimoto et al (6,420,818).

With respect to claim 5, Schmidt et al teaches the claimed invention except for wherein the sealing member is made of a conductive material and is electrically connected to a ground terminal provided on the first piezoelectric substrate. Kishimoto et al teaches a pressure transducer having a sealing member being an electrically conductive adhesive (Column 4, lines 12-17). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a conductive sealing

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member as taught by Kishimoto et al into the pressure sensor of Schmidt et al for the purpose of sustaining electric flow from one electronic component to another thus eliminating short circuiting.

5. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt et al (4,295,102) in view of Miyazaki et al (6,998,926).

With respect to claims 11-14, Schmidt et al teaches the claimed invention except for an antenna pattern formed on the first piezoelectric substrate or on the second piezoelectric substrate and electrically connected to the oscillating circuit for emitting a predetermined electric signal based on pressure information from the surface acoustic wave elements for reference and pressure detection. Miyazaki et al teaches an antenna pattern formed on the piezoelectric sensor (Column 20, lines 49-64). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an antenna as taught by Miyazaki et al into the piezoelectric sensor of Schmidt for the purpose of supplying wireless capabilities of remote applications.

***Allowable Subject Matter***

6. Claims 7-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not disclose or suggest a pressure sensor device having an extending portion formed by extending one end of one of the both piezoelectric substrates while the end is disposed apart from the other piezoelectric substrate; and an acceleration disposed on the extended portion.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermaine Jenkins whose telephone number is 571-272-2179. The examiner can normally be reached on Monday-Friday 9am-530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Jermaine Jenkins

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A handwritten signature in black ink, appearing to read "J. Jenkins", located in the upper right quadrant of the page.